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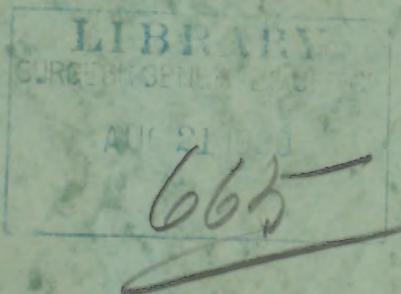
## Lithæmic Affections

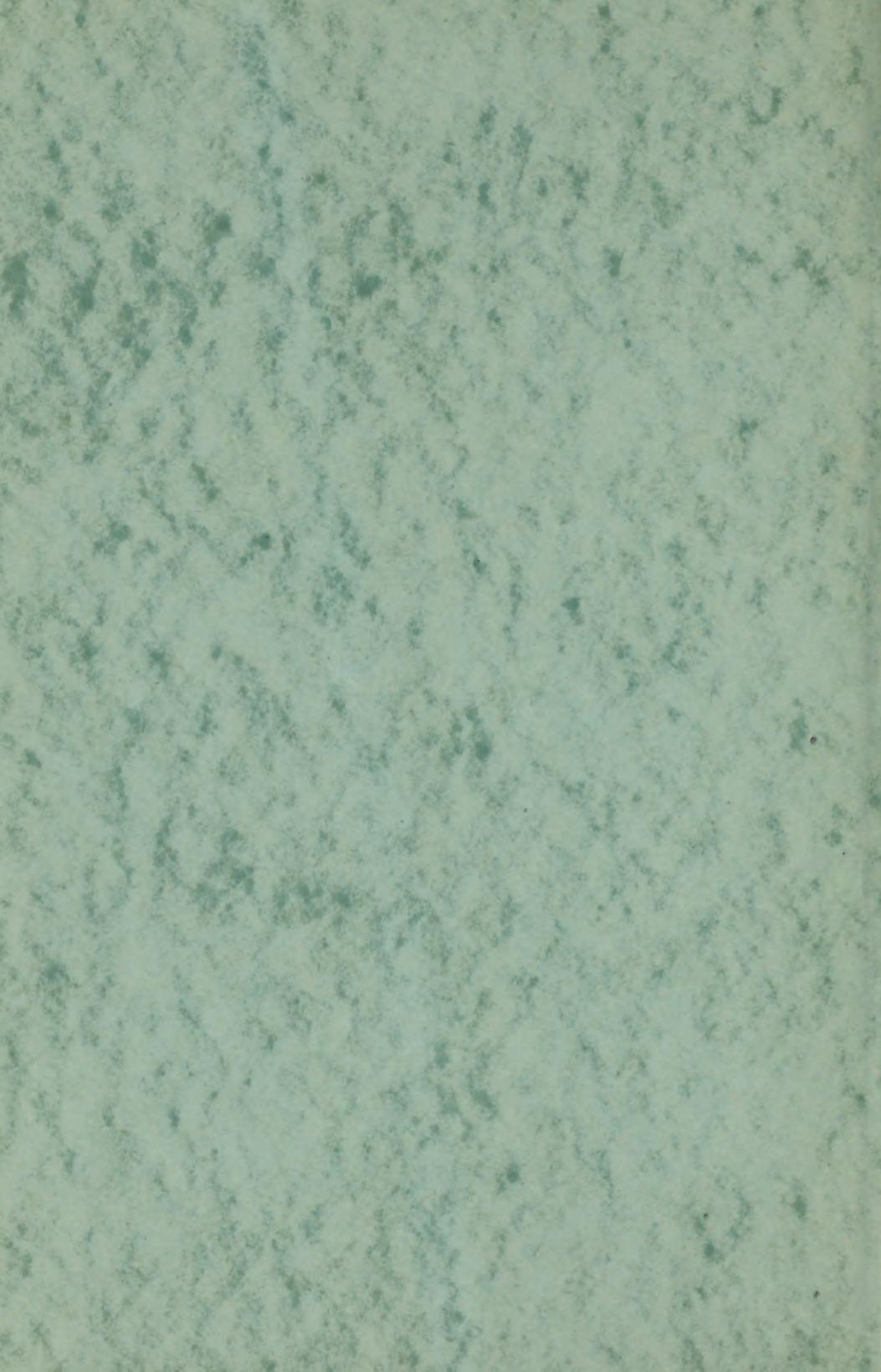
OF THE

## Skin and Mucous Membranes.

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BY A. B. CONKLIN, M. D.





# Lithæmic Affections

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## SKIN AND MUCOUS MEMBRANES.

BY A. B. CONKLIN, M. D.

WE LIVE in a period of unprecedented advancement along the lines of enlightened progress, and it is pleasing to note that the healing art is awakening from the lethargy that has characterized it for a thousand years, and is making rapid strides to the front to take its rightful place among its sister sciences.

Old ideas no longer command respect simply because they come to us with the sanction of years. The accepted fact of to-day may be the proven fallacy of to-morrow. In fact, there is such an alienation from old teaching, and so many contributions to the restudy of disease, that it may truly be said we live in a transition period in medicine.

Gout has been recognized among medical men for ages, but it has remained for the closing years of the nineteenth century to give us any approach to a clear conception of the full significance of the uric acid diathesis in the ætiology of disease.

Who would presume to-day to define the limits of the influence of this diathesis in moulding pathology?

The fruits of our labors thus far have been a surprise to us all, and notwithstanding the extended recognition that has been accorded it during the past few years, our study is but well begun, and I opine that the unfolding of time will show that the profession of to-day sees but dimly the magnitude of the pathogenetic touch of lithæmia as a predisposing factor in the genesis of disease.

We know to-day that it causes many diseased conditions that but recently were viewed in the light of another pathology, and so with to-morrow year shall our wisdom extend and our vision clear, until the multiform manifestations of lithæmia that to-day appeal to the credulity of the few, will then become the conviction of the many—a common heritage of the profession, a truth revealed.

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In former articles a general discussion of the subject of lithæmia or the uric acid diathesis has been taken up, hence for the sake of avoiding repetition I will pass over many of the more common phases and invite your attention to the manifestations of lithæmia that find expression through the skin and mucous membranes.

As has been pointed out in previous papers, uric acid acts in at least a two-fold manner in originating the divers pathological states that may be ascribed, to wit:

(1) In a chemico-mechanical way, or its direct or local effect in setting up irritable and inflammatory states of the urinary tract;

(2) As a toxine acting indirectly through the nervous system, giving us a line of neuroses functional in their incipiency, but often with resultant changes in structural integrity.

That an excess of uric acid in the system acts as a direct irritant to the nervous system, especially the sympathetic, in its vasomotor fibres, is a conviction in the mind of the writer which it seems has been clearly shown by the apparently incontrovertible provings of Haig, as to the effect of an accumulation of uric acid upon the circulation. For the logic of the premises the reader is referred to former publications, or to Prof. Haig's late work.

Let the individual reader draw upon his own observation for illustrations of the diversified and often diametrically opposite variations of function in the two great organs we are considering under different conditions of innervation through a common channel—the vasomotor portion of the sympathetic.

The hot blush on the cheek of modesty, the ashen pallor on the face of fear, beads of perspiration upon the brow of responsibility, and the parched breath upon the lip of embarrassment are but passing shadows of the fitful play of vasomotor innervation.

What is true of the vascular condition of a part under disturbed innervation, is equally true of structural changes that may follow also—seemingly opposite conditions resulting from a common cause.

That the opposite conditions of anæmia and hyperæmia may be induced in a localized tract or throughout the extent of either the skin or mucous membranes by the irritating effects of uric acid upon the vasomotor nervous system, even the most superficial observation would seem to place beyond the range of dispute.

The various diseases of the skin which the writer has observed to have developed in connection with the uric acid diathesis are such as to show that no essential property of this organ may escape the influence of the toxine. Circulation, color, temperature, secretion, sensation, and nutrition—all, singly or collectively—may be disturbed.

The ætiological relationship of lithæmia to functional disturbances of the circulation will be readily recognized, inferen-

tially at least, when it is recalled that the circulation is ever obedient to vasomotor innervation. It has been my observation to more often find the vaso-constrictor fibres of the sympathetic responding to the irritation of uric acid than the inhibitory fibres, and yet the condition of hyperæmia is by no means rare.

The lithæmic patient is prone to chilly sensations, with coldness of the hands, feet, nose and ears, these parts being pinched, shrunken and pale. The skin is dry, there seemingly being no perspiration at all. The peripheral capillaries are contracted, the radial pulse small and hard. The opposite condition of relaxation of capillaries may be met, when the patient will complain of feeling flushed, the hands and feet will burn, perspire, be red and puffed, the face be red and perspiring, the skin hot and moist and the pulse open and softer than in the previous case. The hyperæmic lithæmic patient, if a female, may complain of hot flashes, which are liable to be misinterpreted as arguing some wrong of the reproductive organs.

Should the contraction of the arterioles become extreme within a given area, we then have sympathetic ischæmia. Speaking of the causes of ischæmia, Prof. F. P. Henry, of the Philadelphia Polyclinic, says: "While the causes of this condition are many of them palpable and manifest, \* \* \* the most obscure cases are those dependent upon contraction of the vessel walls from irritation, either direct or reflex, of the vasomotor nerves."

Again, the same author, while upon the same subject, says: "Of ischæmia of nervous origin one of the most striking examples is the form of angina pectoris known as *angina pectoris vasomotoria*. With a perfectly healthy heart there is a more or less general spasm, manifested by pallor of the visible parts and sensations of numbness and a coldness, soon followed by pericardial pain radiating to the left shoulder and upper extremity. These attacks are relieved by agents which dilate the vessels, such as nitrite of amyl and nitro-glycerine."

Reynaud has described a form of arterial spasm of the upper extremities which he terms "Local Asphyxia." "It occurs in weakly individuals on exposure to cold, most frequently on rising in the morning (A significant fact. A.B.C.), and manifests itself at first by pallor and numbness, perhaps by altered sensations, such as those produced by the crawling of insects, or even by severe pain in the ischæmic parts. Bluish spots soon make their appearance and gradually extend and coalesce until the entire limb may assume a cyanotic hue. The affection is generally bilateral. The arterial spasm may last several hours and then pass away, with sensations of increased pain or of burning heat; or, on the other hand, it may result in symmetrical gangrene. It is relieved by friction and warmth, and the best curative measure is the constant galvanic current," which, by the way, is one of the best means of allaying irritation of the sympathetic.

Why should it occur more often on rising in the morning? Of course there would naturally be a little chilling of the surface and contraction of the capillaries on getting out of a warm bed, but I see a better explanation in the fact pointed out by Haig, that there is relatively a larger percentage of uric acid eliminated in the early morning hours up to 9 A. M. than any other time in the twenty-four hours, hence in the early morning the nervous system would be most profoundly under the influence of uric acid, which, as we have seen, produces a contraction of the systemic capillaries.

Looking for a moment to the opposite condition of vascular dilation, it would seem that we must accept the condition of hyperæmia to accommodate the blood driven out of the circulation of an ischæmic region, yet the author above quoted, in expressing his disapproval of the use of the word *plethora* to convey the idea of too great a quantity of blood in the vessels, says: "The symptoms universally ascribed to *plethora*: redness of the face, throbbing of the cerebral vessels, singing in the ears, vertigo, etc., are rather due to products of imperfect digestion. \* \* \* As to the existence of *plethora*, I am extremely skeptical. I have never seen any morbid condition whatever that could be ascribed solely to an excessive number of red cells in the blood. I recognize a condition common to heavy eaters of animal food which has been called *plethora*, but attribute its symptoms for the most part to albumenoid indigestion and would classify it under the head of *lithæmia*."

Fothergill has most admirably described the same condition.

Perversions of function in the secretory glands of the skin and mucous membranes may be seen in such conditions as anidrosis, hyperidrosis, coryza, hay fever and the various catarrhs of the respiratory, genital, urinary and intestinal tracts.

The anidrosis, or lack of perspiration that appears as a sequella of lithæmia, should not be understood as idiopathic anidrosis, which Van Harlingen assures us is a very rare disease, having been found in five cases only among 60,000 reported by the American Dermatological Association. Symptomatic anidrosis, however, is of common occurrence in connection with lithæmic cases.

"It is apt to occur," says Van Harlingen, "in connection with certain skin diseases as ichthyosis, eczema, psoriasis, etc., also as a result of nerve injury, or of an emotional shock." Its occurrence in connection with skin diseases does not, in the writer's opinion, separate it from lithæmia, as I hope to be able to show later on, and assigning it to nerve injury and emotional shock clearly places it among the neuroses, and in a most restricted sense as a functional vasomotor neurosis.

I have seen lithæmic patients whose peripheral circulation was so contracted that the skin was habitually pale and cool, and

even in the warmest weather while exercising vigorously they would show no signs of visible perspiration ; nor would they grow red in the face from exercise or embarrassment.

Hyperidrosis may be either symptomatic or idiopathic. It is symptomatic of many conditions that need not concern us to-day, as well as being at times a sequel of lithæmia. As a secondary affection, Van Harlengen says it may occur in connection with certain affections of the central, peripheral and sympathetic nervous system. As an idiopathic affection he gives us no idea of what may cause it.

James Stewart, in writing of Diseases of the Sympathetic Nervous System, speaks of unilateral hyperidrosis and says : "It is highly probable that it is owing to a lesion of the sympathetic itself or of its medullary or spinal centres." That the "lesion" need not be other than functional is susceptible of demonstration. Unilateral hyperidrosis and lachrymation have each been mentioned by numerous authors in the symptomatology of such vasomotor neuroses as neuralgia, migraine and hysteria.

I have seen such cases too often to think the occurrence a mere coincidence. Show me the doctor who has not suffered from hyperidrosis when suddenly confronted with the gravity of some momentous case, and I will show you a man who is not keenly sensitive to the responsibilities of his chosen profession.

Increased secretions from the mucous surfaces in patients suffering from the uric acid diathesis are conditions by no means rare if we may judge from the meagre literature upon the subject. Says Bishop : "Now, since it is admitted that there are both immediate and reflex functional nervous disorders of the skin, with what show of reason can it be denied that there are similar neurotic disturbances of that other skin which covers the interior surfaces of the body ? The latter membrane is more vascular, more delicate, more sensitive, and more highly organized than the skin. It possesses susceptibility to all agents which affect the skin, and to many others beside."

That one of the causes which may produce a fluxion from one of the mucous surfaces is lithæmia, I have furthermore the evidence of my own observation.

Permit a brief history from memory of a few typical cases among many :

Mrs. S. W., aged 55, had in the winter of 1896-97 an attack of inflammatory rheumatism, which ran a course of about two weeks without any unusual symptoms, and upon the use of Alkalithia had an uneventful convalescence from the arthritic symptoms. About a week after I had ceased to visit my patient, or about three weeks from the beginning of the attack, and while she was still taking the alkaline treatment, I was summoned

rather suddenly to see her again by the husband, who informed me that something had broken "inside."

On arriving at the house I found my patient sitting up, suffering no pain physically, but mentally sorely troubled since she could not account for her strange plight. While dressing in the morning she was suddenly seized with a copious watery flux from the genital tract. I was unable to elicit any history of previous pain or other pelvic discomfort. Indeed, Mrs. W. informed me that she had always been free from "female weakness." Digital examination revealed nothing beyond the fact of increased secretion. A speculum examination was then made, and I think was as convincing as any I ever made. Wiping the vault and cervix dry with a pledget of cotton, I was able to witness the gathering of fresh secretions in the form of great beads of watery mucus, like drops of sweat upon the forehead, oozing through the vaginal walls and coursing down its surface in diminutive streams. That the same weeping was going on within the cavity of the uterus I was convinced by the continuous drainage of fluid from the os. The fluid oozing away gave a decidedly acid reaction to litmus paper.

The history of medicine in every decade for a century has been replete with the records of cases showing the interchangeability of gout with some form of the neuroses, as asthma, chorea, epilepsy, migraine, etc.

Here was a case of utero-vaginal flux as a neurosis occurring in alternation with rheumatism. It seemed a demonstration of Haig's theory as formulated in his late work, viz.: That whenever the alkalinity of the blood is lowered so that it is no longer a good solvent for uric acid, it is precipitated out of this fluid into the fibrous and cartilaginous tissues of muscles and joints, where it sets up rheumatism; and whenever the alkalinity of the blood is raised again, as by giving the alkaline treatment, the uric acid again enters the blood, and, going the rounds of the circulation, acts as an irritant to the nervous system, inviting an outbreak of the neuroses.

The history of the case as to renal elimination furthermore seems to bear out Haig's theory. When first called to see my patient her urine was light colored, of low specific gravity, acid in reaction and below normal in amount—a condition showing a retention of the solids. After taking Alkalithia the urine increased in bulk, the specific gravity rose, and on cooling there was a heavy deposit of amorphous urates. It was while eliminating freely the urates that the flux seized her.

To use an inelegant but forcible expression, my patient was "between the D—I and the deep blue sea." What could I do for her? To have given mineral acids would probably have checked the flux but invited a return of the arthritis. To continue the Alkalithia was to foster the continuance of the flux, but would

not endanger my patient from rheumatism. Placing her upon strict non-nitrogenous diet, I decided to push the alkaline treatment and by thoroughly depurating the system of uric acid, exhaust the cause of the flux. I prescribed Alkalithia one teaspoonful every three hours, in half a glass of water, and gave no local treatment beyond the cleansing douche of warm water and sodium borate. After a few days the flux grew less and less, and finally ceased, at which time I had rendered the urine free in amount and alkaline in reaction.

Where the consequences are not too severe I believe it is better to depurate the blood through the kidneys than to precipitate the acid from it into tissues susceptible of gouty inflammation.

Mrs. C., who was born of lithæmic parents and had herself been a sufferer all her life from uric acid headaches, until I put her upon the alkaline treatment through Alkalithia for a period of three months, after which she had no headaches for over a year—had never been troubled with so much as a simple leucorrhœa, when suddenly she was taken with a profuse, thick, creamy, vaginal catarrh. Knowing her to be a pronounced lithæmic, the case was carefully looked up along that line, with the result of disclosing the evident fact that the flux had taken the place of a headache in her case, which she was again having at times, as she had long since discontinued treatment and would brook no restrictions in her diet. The leucorrhœa was such as to saturate a large napkin in a couple of hours and left a bright yellow stain. It was acid in reaction, excoriating, and set up a considerable pruritus.

The urine was scanty, highly acid, of high specific gravity and contained an excess of uric acid. I put her upon the alkaline treatment, as in the other case, and after about ten days had so far removed the excess of uric acid from the blood that the leucorrhœa ceased without any local treatment, beyond that for sanitary purposes and to relieve the pruritus. I made use of the speculum, as in the former case, to facilitate the study of the condition, and found it apparently vaginal only, there being in the os and cervical canal a glairy transparent mucus not unlike normal secretion. Like the first case, this case has since had a second attack, not unlike the first, and due to the same underlying systemic condition.

Furthermore, this patient is a victim of naso-pharyngeal catarrh—hypertrophic rhinitis—and has many times observed that there is a coincidence, at least, between a condition of excessive elimination of uric acid and an increase in the nasal discharge.

After having taken the alkaline treatment for three months, as above mentioned, she assured me she had never, within her memory, been so free from catarrh. This patient was well

nourished and as plump as a sculptor's model, but always looked pale and bloodless, because her peripheral capillaries were always contracted from irritation of the sympathetic by uric acid.

She assured me she had taken enough iron when a girl, in an endeavor to improve her complexion, to make herself sheet-iron lined, and all to no purpose. Of course not. Her color was not the greenish yellow color of chlorosis.

While on this subject, let me give you the words of William H. Thompson on chlorosis: "It is one of the evidences, in fact, that a case of anaemia is not chlorotic, if it does not show any result from medication, for even in the most relapsing forms of the disease, iron will show its powers as often as it is administered."

Alkaline treatment did for her what no amount of iron could do—it opened up her capillaries and sent the bright blood tingling through every peripheral part, carrying with it healthy nutrition, that gave her a pink complexion and about twenty pounas increase of avoirdupois.

Miss J. C., aged 30, has chronic hypertrophic rhinitis; is a sufferer from lithæmia in various ways; has a very variable urine, both as to quality and quantity, often being very scanty, concentrated and highly acid, at which time it throws down, on cooling, a heavy precipitate of pink urates. Gritty particles are often found in the bottom of the urinal and there is a great deal of "backache" from the local irritating effect of the uric acid upon the kidneys and ureters.

The relationship between the catarrh and the lithæmic dia-thesis is shown in her case—

(1) By the fact which has often been noticed that, whenever the urine shows the greatest excess of uric acid the catarrh is most profuse, and *vice versa*; and

(2) A course of alkaline treatment long enough continued to depurate the system of uric acid always works an improvement in the catarrhal condition.

N. R. M., male, aged 46, was a neurotic lithæmic, whose only ailment, when I first formed his acquaintance in a professional way, fifteen years ago, was an irascible temper, nervousness, exalted sensibilities at times, cold hands and feet, pinched, care-worn features and pale complexion—a complex of symptoms, noticeably worse whenever the urine showed an excess of uric acid circulating in the blood.

Several years later, when my patient began to show more plainly the ravages of the lithæmic octopus that had him in its grasp, on several occasions when there was an unusually large amount of uric acid and urates in the urine, he had attacks of a copious watery flux from the bowels, acid in reaction, with pain and gripping in the bowels, and cutting, smarting pains at the anus and excoriations later on.

Although Mr. M. was my patient when he treated with any one, yet it was only when he would get way down that he would do anything for himself; however, being a near neighbor, I saw him almost daily and watched the case slowly go down until it terminated in diabetes and death.

In a paper read before our State Medical Society, at Detroit, in 1888, I took the ground that diabetes in most cases was primarily a functional vasomotor neurosis, the final result of an antecedent and underlying lithæmia, and I have seen no reason for changing my views with the passing of the decade.

James T. Putnam, while instructor in Diseases of the Nervous System at Harvard Medical College, in speaking, a few years ago, of neurasthenia, which he called a functional neurosis, often with a lithæmic antecedent, says that these patients may have "attacks of diarrhœa, or more strictly, discharges of watery fluid, coming on suddenly as a result of slight fatigue or excitement, \* \* \* or discharge of large quantities of mucus in masses or strips with or without faeces."

While a discussion of neurasthenia is foreign to our subject, I will say, parenthetically, that the disease is one which we have recognized for years as a possible sequel of lithæmia, and the diarrhœas reported by Putnam, it seems to me, may admit of the same explanation as the intestinal flux of N. R. M., the utero-vaginal flux of rheumatism in the case of Mrs. W., and the vaginal flux of migraine in the case of Mrs. C. Whether the complex of symptoms be such as to receive the diagnosis of neurasthenia, or diabetes, or rheumatism, or migraine, is really of small import, for they are each and severally but the manifestations of a common cause—uric acid toxæmia—and the several fluxes are simply the result of the disturbance wrought in vasomotor innervation by this toxine.

The direct chemico-mechanical effect of uric acid in setting up divers pathological conditions of the urinary organs is too comprehensive a subject to include in our present paper, and yet it is eminently pertinent to our subject to call your attention in passing to some of the lesions of the urinary mucous membrane for which uric acid is directly and solely responsible.

Whenever a highly acid urine, heavy from an excess of uric acid, is excreted for any considerable length of time, there is no part of the urinary tract, from the uriniferous tubules to the meatus, that may not suffer from its irritating contact.

Should the anatomical formation of the urinary channel be such as to furnish pockets for the retention of residual urine, such an excretion as I have described would set up, for instance, in a long prepuce with a contracted orifice a typical balanitis. If behind an old stricture, a fresh urethritis would ensue as a reminder of former transgressions. If within or behind an enlarged prostate, an acute exacerbation of prostatitis may be the

result, and if upon the tribone of the bladder a trachelo-cystitis, to the extent of strangury and tenesmus may follow.

The congestion and irritation set up along the ureters by a highly acid and concentrated urine produces a sickening pain, which is characteristic in location, being felt in the back as high as the kidneys, extending diagonally forward and downward over and within the point of the hip to the base of the bladder in front.

Within the kidneys the inflammation set up may be confined to the pelvis of the organ or involve the uriniferous tubules as well, and as with the ureter, the trouble may be unilateral or affect both sides simultaneously.

Any of the inflammatory conditions I have pointed out may be simple or catarrhal, and the urethritis will almost certainly be purulent if there has been a specific inflammation of the part within a year.

While upon the subject of uric acid causation of inflammatory lesions of the urinary tract, it fortifies our position somewhat to be able to call to our support the teachings of so able a medical writer as Professor Da Costa, of Philadelphia, though, should he share the fate of his less illustrious contemporary, we fear he may have exposed himself to the charge, from the ultra-conservative obstructionists in medicine, of being "a crank on uric acid," for presuming to attribute more to its influence than is to be found on those moss-grown tablets of medical record vouchsafed to us from an antiquated past.

Four years ago, in a carefully prepared paper, Prof. Da Costa denied, as had been held up to that time, that tube-casts in the urine constitute unmistakable evidence of interstitial nephritis—true Bright's Disease—and stated that they might occur from simple inflammation of the uriniferous tubules from the passage of an excess of uric acid—simple, desquamative tubular nephritis.

An excess of uric acid in the blood, by contracting the peripheral capillaries, as will readily be seen, must exert a very depressing influence upon the nutrition of the skin.

The more common and less severe dermal manifestations of lithæmia are a pale, anæmic-looking skin, already referred to, which is in some cases glossy in appearance; again, is relaxed, often dry, horny, inelastic, furfuraceous or desquamating. The nails are dry and brittle, the hair also being dry and dead, thin, broken and shedding, the scalp itching and covered with a fine, dry, white dandruff.

The more aggravated conditions which ensue at times are localized patches of rosacea, psoriasis, pityriasis, acne, hives, urticaria and eczema; herpetic and pemphigoid eruptions; purpuric, ecchymotic and gangrenous spots; œdematos areas; pimples, boils and atrophy.

Neumann says: "There is no doubt that a large proportion of cutaneous diseases depend upon disorders of the vasomotor

nerves, which cause certain derangements of circulation in the arteries, veins and cutaneous glands. Anæmia and hyperæmia of the skin happen from vasomotor irregularities."

J. Nevin Hyde, of Chicago, a dermatologist, certainly entitled to speak as one in authority, recently informed me that he was treating a great many cases of skin disease as dermal manifestations of lithæmia, and the uniformly good results he derived from the use of Alkalithia place their pathology beyond question.

N. S. Davis attributes to "uricacidæmia" such conditions as numbness and intense itching of the skin, creeping sensations, formication and hyperæsthesia.

Arthur Van Harlingen, while Professor of Diseases of the Skin, Philadelphia Polyclinic, in writing an article upon skin diseases, said: "The cause of psoriasis is not known. It is apt to occur in well-nourished, rose-complexioned, light-haired people, the 'picture of health,' excepting that they are apt to be a little rheumatic."

Alas for the "little rheumatic." How ominous!

Under treatment he recommends acetate of potash and alkaline mineral waters—also very suggestive.

Of eczema he wrote, "The occurrence of gout and rheumatism also may be mentioned among the aetiological factors of eczema. In certain individuals the presence of an excess of uric acid in the system is sufficient to produce and keep up eczema."

The same writer also mentions a rheumatic form of purpura, which may occur in connection with arthritic symptoms or independently of them.

Bazin, of Paris, as far back as 1860, in writing of herpes, expressed the belief that many cases were due to arthritic influence, "and when occurring in children, always so."

William Oliver Moore, of New York, says, "Zoster appears to be due to disease of the ganglionic system more often than dependent on affections of the spinal cord. It occurs infrequently as a reflex neurosis."

Walter Mendelssohn, in writing of the minor pathological changes in gout affecting the *legumentary system*, mentions as chief among them "Certain skin lesions, especially *eczema* and various forms of *acne*, *psoriasis* and *urticaria*."

Huntington Richards, of New York, an aural surgeon of some prominence, in writing of acute eczema of the external auditory canal, finds it difficult to distinguish the eczematous character of the dermatitis from a simple dermatitis, and says many times it can be shown finally, "By yielding to treatment only after a course of internal medication directed toward improvement of the gastro-intestinal and hepatic digestion, and in this way toward an elimination of the imperfectly oxidized matter from the blood, has indirectly proven the existence of a so-called

'gouty dyscrasia' to be a part cause or a chief cause of the skin lesion."

In dealing with chronic eczema the same writer expresses his faith in the lithæmic origin in no ambiguous language, when he defines it as, "A condition that, whatever be its exciting cause, or origin, or whatever its method of manifestation, probably owes its existence in the first instance, in the vast majority of cases, to a perversion in the constitution of the patient's blood, brought about by faulty elaboration of its constituents, and existing in what is known as the 'gouty' or 'lithæmic dyscrasia.'"

He has also observed that "the ill-understood condition of the nervous system known as neurasthenia, may in some instances play the part of causative agent in instituting or maintaining this chronic dermatitis." Its existence in connection with neurasthenia, in some cases, should not be denied, but I for one should certainly question the interpretation of symptoms that would magnify the significance of an intercurrent neurasthenia to the extent of making it a primary cause. Recognizing in neurasthenia an expression of lithæmia, would it not be more in keeping with the truth to view the eczema and the neurasthenia as dual symptoms of a common cause, coincidentally appearing.

We can only infer that the writer quoted did not recognize the lithæmic origin of neurasthenia, else he would have expressed himself relative to a triplet of pathological conditions instead of a couplet in the following able position: "The rather common co-incidence of a more or less distinctly eczematous dermatitis of the auditory canal, acute or chronic, with a catarrhal condition of the naso-pharyngeal mucous lining, has led some observers to suspect the existence of a reflex connection of cause and effect between the throat lesion and the ear; and such a relation between the two sets of lesions and symptoms can not be positively denied; yet to the writer it appears equally reasonable to assume that in such a case the pharyngeal and aural troubles are simply coincident, and that both are equally the secondary manifestations of an underlying dyspeptic or 'gouty' poisoning of the patient's blood." He again shows with what diagnostic acumen he interprets facts when in giving his treatment of chronic dermatitis of the auditory canal he classifies it under two heads comprising respectively the "constitutional treatment of the dyspeptic condition or of the 'lithæmic dyscrasia' \* \* \* and the purely local treatment of these local manifestations."

Oulmont and Fourchard, of France, report such trophic changes in hysteria as brittleness of the nails and eczema; changes of purely vasomotor origin.

Raymond, of France, also reports a case of eczema, ecchymotic spots and pemphigoid eruptions in hysteria.

I have already, in a paper presented to the World's Congress in 1893, recorded my conviction of the lithæmic origin of hysteria in some cases and supplemented it with a report of two cases, hence the association of various dermatites with hysteria is most natural in the writer's opinion, but hysteria is but a symptom itself and we should look beyond it for the real cause of any concomitant dermatites.

Quinquaud studied the effect of uric acid upon the functions of the skin, by administering from three to six grains a day of the acid to his patients, and observed as the most common results "boils and patches resembling eczema," "the dermal analogue of coryza," as Bishop aptly puts it.

I have many times in the last fifteen years successfully applied potassium acetate to the relief of boils by removing the products of imperfect metabolism.

I am led to believe that the case reported below is of infrequent occurrence, as I have seen but the one case in eighteen years. I was called to see Mr. H. N., in consultation with Dr. A., who had carried him successfully through a three months' run of inflammatory rheumatism to complete recovery from all arthritic symptoms. I found him suffering from a superficial necrotic spot, on the back of the left hand, about the size of a twenty-five cent piece, that was slowly extending laterally, as well as to the deeper tissues, and had resisted all local treatment for two weeks. An examination of the urine showed uric acid present in excess. I diagnosed rheumatic purpura, a condition described by Van Harlingen, advised the alkaline treatment, which was agreed to, and the gangrenous spot soon took on healthy action and disappeared. No local treatment was advised.

F. R. W., a good feeder, and a man of sedentary habits, has invited the insidious growth of the lithæmic habit, and is never free from some of the dermal manifestations of the fruits of his indulgence. The contracted condition of his capillary circulation makes three suits of underclothes in winter a part of his daily wearing apparel.

He has a chronic eczematous condition of the auditory canals that causes him to dig at his ears frequently, and even at times unconsciously.

His beard is short, irregularly broken, crinkled and full of brawny exfoliation that finds lodgment in profusion upon his clothes. A few desquamating spots of horny epidermis mark his face. Patches of pityriasis maculata are to be seen upon the chest, and a most exasperating and stubborn eczema surrounds the anus, extending along the median raphe and at times covering a portion of the scrotum. Local treatment is but partially palliative, alkaline treatment with Alkalitha has proven the best internal measure, but he will never be cured because self-denial

in eating, drinking and smoking are an indispensable part of curative treatment, which he will not carry out beyond the period of immediate relief.

E. A. P. consulted me with regard to a distressing eczema of the scrotum. He was indeed a great sufferer. The scrotum was relaxed and had suffered a complete loss of the epidermis, being as raw as a piece of meat, which it resembled, and continually weeping. The best local treatment I could give him had little or no effect. It continued to weep and smart and burn.

Looking now upon the scrotal condition not as a local disease, but as the evidence of things unseen, I inquired more carefully into my patient's history, which I found rheumatic, and the examination of the urine convinced me I had a dermal manifestation of lithæmia to deal with and the scrotal condition was not the disease *per se*.

I put my patient now upon a non-nitrogenous diet and instituted the alkaline treatment by prescribing Alkalithia, with a liberal portion of water, and with but local hygienic measures; my patient in a few days began to show signs of improvement, and in due time made a complete recovery.

Miss P. consulted me for chronic "sick-headache," from which she had suffered for years at intervals from one to three weeks. Having learned from personal observation extending over a period of fifteen years that many of the so-called "sick-headaches" are due to an excess of uric acid circulating in the blood, I at once satisfied myself upon this point and put her upon Alkalithia in teaspoonful doses three times a day, with a liberal indulgence in water, and proscribed the further indulgence in nitrogenous foods.

She had but one more headache of any severity before the habit was broken up, and, what was equally pleasing and unexpected to us both, was the removal of an unsightly roseola of the nose that had withstood the onslaught for years of divers doctors, with no paucity of remedial ammunition.

One of the most interesting and typical cases of the dermal manifestation of lithæmia that ever came to my notice was about two years ago. It was a case of diffuse psoriasis in the person of Mr. C. T., *aet* 34, white. The early history of the case I am unable to report, it having existed for months before falling into my hands.

From the crown of the head to the ends of the toes was hardly a spot of normal skin to be seen. It was of an inflammatory redness throughout a greater part of its extent, and covered with the characteristic grayish mother-of-pearl-colored scales, imbricated in arrangement and so abundant that after my first examination I was able with a broom and dust-pan to collect a handful of scales from the carpet at my patient's feet. Mr. T. had been the patient of a number of other physicians before con-

sulting me, and some of them, as I knew from personal acquaintance, were a credit to the profession, so I did not doubt but that he had had most approved treatment. Without considering I had any "snap" I began by giving my patient the routine treatment with Fowler's solution and a tonic of quinine, iron and strychnia to correct the anaemia that had supervened upon his long suffering. Locally I prescribed oil of cade one part, olive oil three parts. In ten days I saw my patient again with no noticeable improvement beyond an improvement in his appetite, presumably from the tonic.

Avoiding details I will say I gave the case no small amount of thought and no small amount of medicine, including iodide of potassium, berberis aquetolum, iris, phytolacca, alnus, "Succus Alterans" and an infusion of cornus circinatus internally, which latter I have found a very efficient remedy in many skin troubles; and locally green soap, chrysarobin, oleates and juniper pomade with the result, at the end of two months, of having wrought no material improvement in my patient's condition. I had run the whole "gamut" but somehow had not struck the right note. However, there was hope for me if there was not for the sufferer for I knew I wasn't "onto my job." In short, I knew some things about the case I was not telling the patient. Because I had never before recognized a case of psoriasis of lithæmic origin, I did not even inquire after any evidence of faulty metabolism or excessive elimination of uric acid in studying my case, and it was only an accident when I "caught on" when I did. On the occasion of one of his trips to my office, my patient asked for something for his "water," which he said was scanty, dark and scalding. Taking a sample then and there I found the specific gravity 1.028, color dark, reaction highly acid, albumen and sugar, none.

I felt a chagrin which I did not confess upon learning that this was a more or less constant feature in the case.

Could it be possible that his lithæmic condition was responsible for the psoriasis? I resolved upon a demonstration. I put Mr. T. upon alkaline treatment in large doses, omitting everything else, ordered him to drink freely of water and avoid nitrogenous foods.

In ten days he returned showing a most remarkable improvement.

Being anxious now to make a test case of it and see what anti-lithæmic treatment would do, I continued my alkali, and in the incredibly brief period of four weeks from the beginning of alkaline treatment my patient was cured of his psoriasis and has had no return.

While this was one of those cases we often meet that is more interesting than profitable, yet my reward was, after all, invaluable,—the satisfaction of having recognized a hidden truth.

I have recently met two other physicians who have recognized in psoriasis a dermal manifestation of lithæmia, and the success that followed the use of Alkalithia, as in my own case, was a clinical demonstration of the correctness of the diagnosis.

Van Harlingen says: "The causes of psoriasis are not known." I know what was the cause of psoriasis in one case. While "one swallow does not make a summer," and I would not jump to the conclusion that every case of psoriasis is due to lithæmia, still I must repudiate the sweeping confession of ignorance of Van Harlingen, who wrote as one in authority. Disturbances of sensation in the skin, supervening upon the lithæmic diathesis, comprise such common conditions as hot and cold flashes, morning chills, localized or unilateral areas of numbness, formication, anesthesia or hyperesthesia, dermatalgia and pruritis, either aural, vulvar or scrotal.

As before stated, the hot flashes, if occurring in a female subject, may be attributed to some pelvic neurosis, by mistake. When the lithæmic neurotic female comes to the menopause, let it be borne in mind that the susceptibility of the ganglionic centres may be materially diminished by an anti-lithæmic regime, including alkaline treatment, thereby rendering them more tolerant of the newly-developed condition of uterine and ovarian congestion, which no longer finds relief in the periodical flux, and in this manner a measure of freedom may be secured from those vasomotor disturbances that send the pent-up blood surging to the head and upper extremities, with the accompanying sensation of "hot flashes."

Morning chills, accompanied by fever or other hectic phenomena, occurring day after day, should lead every careful physician to look for the existence of lithæmia, lest a more superficial examination lead him to attribute them to the already much maligned "malaria."

Numbness of the hands or feet, or of an arm or leg, or of a localized spot upon the limb, as I have witnessed, or a unilateral partial anesthesia, with numbness and tingling, are common symptoms of the lithæmic dyscrasia, and, indeed, I am not prepared to deny that a true hemiplegia of intermediate central origin may not follow upon effusion from cerebral congestion, as a result of the primary peripheral capillary contraction of lithæmia.

Before closing our paper, some consideration should be given to the treatment of the various phases of lithæmia we have pointed out, else the object of all our study is not attained.

In the first place, let it be borne in mind that the lithæmic dyscrasia is either the predisposing cause of the peripheral disease or is the disease itself, of which the local wrongs upon the skin and mucous membrane are but the symptoms.

In either case, anti-lithæmic treatment is certainly indicated. Not that lithæmia is the only cause of the conditions I have

pointed out; not but what other causes may be operative at the same time.

Unquestionably there are exciting or determining causes in every case that shape the character of the lithæmic display, giving us an eczema in one case, a vaginal flux in another, a pleuro-pneumonia, there a migraine or naso-pharyngeal catarrh or neuralgia, or any other of the manifestations of this hydra-headed monster.

As the one great predisposing cause, it should have more significance attached to it than any number of mere exciting causes that may appear in a given case and act only as modifying factors.

As another has very plainly stated it, "If the overwrought nerves are relieved of this source of irritation they are much less likely to respond to other excitants; and, if the morbidly-susceptible condition of the nerve centres is due to the action of the uric acid, its over-sensitivity to all excitants may be relieved by correcting the uricacidæmia."

What, then, is to be prescribed for these various lesions of the skin and mucous membranes which we have described as lithæmic? It distressing in character, local palliative treatment may become necessary; as a curative measure, I believe it is ~~wellnigh~~ impotent. Curative treatment certainly lies in the line of removing the cause. That anti-lithæmic measures constitute a curative treatment I have had frequent and ample verification.

The indications are, then, to reduce to a minimum the amount of uric acid in the blood. This may be done in two ways, either by precipitating it out of the blood by lowering the alkalinity of this fluid by the administration of mineral acids, or by increasing the alkalinity of the blood with alkalies, making it a better solvent for uric acid, thereby fitting the latter for elimination through the kidneys. Should speedy relief dictate our manner of procedure, possibly the acids would give us quicker results, but it would be given at the risk of precipitating a rheumatic condition upon some of the cartilaginous or fibrous structures, and whenever uric acid appeared again in the circulation a repetition of the former attack might be expected.

Sooner or later it must be eliminated from the body entirely, to give the patient complete immunity.

In the absence of more speedy, but temporary, relief I should stand unequivocally for the alkaline treatment. There are alkalies and there are alkalies. That any one is superior to all the rest I am unwilling to say. We all have our preferences. There are a few points, however, in connection with the giving of alkalies which should not be lost sight of. Some are more palatable than others to take; some have much more unpleasant effect upon the stomach than others; some produce still other unpleasant results, as the tinnitus aurium from soda-silicate;

and all the lithia waters contain but a very small percentage of lithia salts.

Of late, effervescing alkaline preparations have come into favor quite rapidly, including tablets and granular salts. Non-effervescing tablets should be classed with plain alkaline salts, the only advantage possessed being the convenience of administration. It is the writer's opinion that effervescing preparations offer some advantages over preparations not effervescent.

The advantage, of course, lies in the carbonic acid gas liberated during effervescence, and this, by virtue of its local sedative or anæsthetic effect, obtunds the sense of taste, rendering palatable preparations that would otherwise be disagreeable to the taste. In the stomach, the carbonic acid gas, by virtue of its sedative effect upon the terminal nerve filaments, reduces to a minimum such unpleasant effects that are apt to follow upon the administration of plain alkalies, as pain, impaired digestion, flatulence, "waterbrash," etc.

The carbonic acid gas being the one factor then which determines our choice of an effervescing preparation, it follows that that line of effervescing preparations from which the patient may derive relatively the largest percentage of gas is the most eligible. I have used both tablets and granular salts (effervescing), and judging from my own experience an effervescing tablet is much inferior to an effervescing granular salt, as will be readily seen when the discrepancy is pointed out.

An effervescing tablet, like any other, needs to be compressed hard in order to hold its shape and keep from breaking up when handling. This makes it effervesce very slowly, the gas in fact escaping bubbles at a time, which phenomena, however, is pointed to by the manufacturers and introducers of tablets as a "beautiful display."

The patient must needs wait until the tablet is dissolved before the dose can be taken, when it will be found the gas has escaped and your patient gets, instead of a strongly effervescent draught, an ordinarily plain solution.

With a granular salt, it all effervesces at once, is immediately soluble and the patient gets a large volume of carbonic acid gas, whereas with an effervescing tablet he gets practically none, and as the gas is the essential feature the argument is altogether in favor of an effervescing preparation.

For the past two years I have been making a careful study of a preparation called *Alkalithia*, a granular effervescing salt with the following formula :

R. Caffeine . . . . .	gr. I.	}
Lithia Carb. . . . .	gr. V.	
Sodiæ Bicarb. . . . .	gr. X.	
Potassii Bicarb. . . . .	gr. X.	
Eff. Salt q. s. ad. . . . .	5 <i>i</i>	

As will be seen from the formula, each drachm contains twenty-five grains of the combined alkalies, and while the dose is put down as a drachm, I would say to the individual physician, make your own dose upon the basis of the amount of contained alkalies, according to the case in hand. It is at once palatable, tasting not unlike plain soda water from the fountain, agrees nicely with the stomach and furnishes results more rapidly than any other alkaline preparation I have ever used, at the same time producing little or no unpleasant after effects.

In the interest of palatable medication *Alkalithia* is certainly a valuable addition to our *materia medica*.

Anti-lithæmic treatment, however, comprehends much more than the mere administration of one's favorite alkaline treatment.

All treatment of the lithæmic diathesis may be embraced under two heads, viz.:

(1) To stimulate the elimination of the uric acid already on hand, and

(2) To prevent as far as possible the further formation of uric acid in the system. To accomplish the latter is much the more difficult task of the two, and the best efforts of the physician often prove futile because his patient becomes rebellious against the restrictions thrown around his manner of living.

Looking upon uric acid as one of the products of the constructive metabolism of albumenoid food stuff upon the one hand, and of the destructive metabolism of body tissue upon the other, it follows that, to reduce to a minimum the formation of uric acid in the system, the nitrogen bearing foods should be stricken from the dietary and oxidation in every way promoted. Notwithstanding the weight of authority I oppose, I believe that animal food but feeds the flame we seek to smother.

The lithæmic should be emphatically denied the heavier meats, and nitrogen bearing foods like cheese, eggs, ripe peas and beans.

Fish may be borne with a measure of impunity by some patients, while others will have to be reduced to a strict vegetarian diet of fruits, vegetables and cereals, eliminating those richest in nitrogen.

The thorough digestion of such foods as may be selected should be sedulously guarded, and my experience leads me to believe that the two remedies, Fowler's solution of arsenic and hydrochloric acid, are worth more than all others in combating the digestive disturbances of the lithæmic.

In those cases of lithæmia where the gastric disturbances are neurosal in form, and accompanied by pain, often neuralgic in character, sour stomach and eructations, give the Fowler's solution in three-drop doses after meals, and hydrochloric acid in two-drop doses after meals, in water, for those patients whose lithæmic condition is due to the imperfect digestion of proteids from a

lack of hydrochloric acid in the gastric juice. The bowels should be made to move a couple of times each day, and for this purpose,—as well as to stimulate the liver, to the functional inactivity of which some writers attribute the elaboration of uric acid,—I know of no better remedy than sodium phosphate, and here again I have found the Granular Effervescent Salt superior to the plain salt. Let it be taken in thirty-grain doses on rising in the morning and on retiring at night, in half a glass of water. Being an alkali so much the better. It is *par excellence* the laxative for the lithæmic.

Daily baths should be ordered, to the end that the skin, as a great eliminating surface, be kept active, and by thus improving its circulation and nutrition in accordance with the recognized principles of hydrotherapy, much real good may be accomplished in combating lithæmic skin troubles.

As a direct aid to oxidation systematic exercise should be taken daily and a liberal supply of pure air be vouchsafed to the sleeper at night. The use of tobacco and alcohol, which cripple oxidation, should be prohibited.

And last but not least, insist that the lithæmic drink freely of water, for only by flushing the kidneys thoroughly can the uric acid be effectively gotten rid of.

I cannot conceive of a more fitting conclusion of a discussion of the effects of lithæmia upon the skin and mucous membranes than to invite your attention to the uric acid origin of hay fever, as championed by Dr. S. S. Bishop, of Chicago.

The doctor has written a recent and valuable work upon Diseases of the Ear, Nose and Throat, in which he has devoted two entire chapters to a discussion of the influence of uric acid upon hay fever.

It was recently my good fortune to make the acquaintance of Dr. Bishop while in Chicago, and in a pleasant and somewhat extended interview with him along the line of uric acid troubles in general and hay fever in particular, I was given an increased interest in the theory he has with such plausibility promulgated, and until opportunity is given to demonstrate the truth or falsity of his proposition I am not in position to gainsay his argument. His position is as bold as it is novel, and I admire him for the courage of his convictions: convictions born of the union of a rich experience with painstaking methods of investigation; convictions before which the less studious should pause with becoming respect before passing judgment, or flippantly attempting to set aside, with the mere fiat of disbelief, truths born perhaps to adorn the pages of enduring history.

In 1885 Dr. Bishop proposed the term “nervous catarrh” as a substitute for the too restricted term hay fever. A number of writers have since adopted the term.

In 1887, before the section on Psychological Medicine and Nervous Diseases of the Ninth International Medical Congress at Washington, he argued the neurotic character of the disease and received the almost unanimous support of the assembly. In 1893, in the first prize essay of the United States Hay Fever Association, and in the same year before the American Medical Association, he proposed the uric acid theory of hay fever. About the same time, one Shaw Tywell, of Toronto, had published a paper entitled "A Predisposing Cause of Hay Fever," in which he advocated the same theory.

Thus we have two men about simultaneously, each ignorant of the work of the other, giving to the world the fruits of their labors in the way of a valuable discovery in medicine. The contribution of each is doubly valuable because each confirms the teachings of the other.

The role which uric acid plays in the genesis of hay fever is that of a predisposing cause. It acts as an irritant or excitor of the nervous system, exalting its impressibility, thereby making it more susceptible to exciting causes (dust, odors and nasal hypertrophies), thus giving us exaggerated results from trifling causes.

Says Bishop, "It appears from the manner in which paroxysms of hay fever are started and developed that there are three conditions upon which the existence of the disease depends:

- (1) Abnormally susceptible nerve centres. (Lithæmia. A. B. C.);
- (2) Hyperæsthesia of the peripheral termini of the sensory nerves, and
- (3) The presence of one of a large variety of irritating agents.

Exclude one of those conditions and the paroxysms are presented. Allay the susceptibility of the nervous centres by certain cerebral sedatives and an attack is averted or arrested. Anæsthetize the nervous supply of the over-sensitive areas and the result is the same. Remove the patient beyond the reach of exciting causes and he is as comfortable as any mortal."

The uric acid cause of nervous catarrh is not antagonistic to the present status of medical opinion or surgical treatment, but, on the contrary, explains questions that were inexplicable before.

Speaking of "new growths and other lesions of the nasal mucous membranes," as precipitating causes acting in conjunction with lithiasis, he observes, "The particular form of manifestation may be determined by the growth or seat of irritation located in the nasal cavities. When this is the only determining factor of the nature of the morbid symptoms, no other organic disease having resulted from the long standing trouble, the removal of such a peripheral source of irritation may give relief

Abortive Treatment:—With the uric acid phenomena in mind I attempted to break up the morning attacks of sneezing and nasal stenosis by doses of acid at bedtime and on first awakening in the morning. The experiment was a success. A series of wretched mornings was followed by freedom of respiration and a sense of well being that seemed like a physical millennium. After this result of preventing the morning increase in the alkalinity of the blood in order to prove the correctness of my deductions, I used an alkaline treatment, and was both delighted and disgusted with my results. The old enemy raged again, but here was clinical proof of my first proposition. I have successfully repeated these experiments, until I am satisfied of the correctness of these conclusions.

After relieving the suffering with the acid phosphate, I have produced it again by neutralizing the acid with an excess of bicarbonate of sodium and employing the usual dose. This converted the acid into a ready solvent of uric acid, flooded the blood with it, and produced the attacks. In turn I have followed this up with the acid, relieved all the catarrhal symptoms by precipitating the uric acid from the blood into the tissues and produced the characteristic gouty pains. Again, by substituting drachm doses of phosphate of sodium for the acid, I have precipitated all the symptoms of a severe nasal catarrh.

I am of the opinion that, with this new theory, therapeutics, and proper diet of this disease, the medical profession need no longer say to hay fever patients, in a patronizing way, "suffer little children, for of such is the kingdom of heaven." But we must recognize and combat the uric acid diathesis if we would bring comfort to these patients and obliterate a stigma that dims the lustre of our great art.

April, 1898.



